

# SEQUENCE LISTING

<110> Weiner, Richard I.  
 Martial, Joseph A.  
 Struman, Ingrid  
 Taylor, Robert  
 Bentzien, Frauke

<120> Novel Antiangiogenic Peptide Agents and Their  
 Therapeutic and Diagnostic Use

<130> UCSF-018/02US

<140> 09/819,094

<141> 2001-03-27

<150> 09/076,675

<151> 1998-05-12

<150> 60/046,394

<151> 1997-05-12

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tgccttcattg caccatacgt tcttcggggc ctccgatagg ataggtttcg acatctctaa 360  
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35 40 45

Arg Gly Phe Ile Thr Lys Ala Ile Asn Ser Cys His Thr Ser Ser Leu  
50 55 60

Ala Thr Pro Glu Asp Lys Glu Gln Ala Gln Gln Met Asn Gln Lys Asp  
65 70 75 80

Phe Leu Ser Leu Ile Val Ser Ile Leu Arg Ser Trp Asn Glu Pro Leu  
85 90 95

Tyr His Leu Val Thr Glu Val Arg Gly Met Gln Glu Ala Pro Glu Ala  
100 105 110

Ile Leu Ser Lys Ala Val Glu Ile Glu Glu Gln Thr Lys Arg Leu Leu  
115 120 125

Glu Gly Met Glu Leu Ile Val Ser Gln Val His Pro Glu Thr Lys Glu  
130 135 140

Asn Glu Ile Tyr Pro Val Trp Ser Gly Leu Pro Ser Leu Gln Met Ala  
145 150 155 160

Asp Glu Glu Ser Arg Leu Ser Ala Tyr Tyr Asn Leu Leu His Cys Leu  
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<211> 124

<212> PRT

<213> Homo sapiens

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Arg Asp Leu Phe Asp Arg Ala Val Val Leu Ser His Tyr Ile His Asn  
 20 25 30

Leu Ser Ser Glu Met Phe Ser Glu Phe Asp Lys Arg Tyr Thr His Gly  
 35 40 45

Arg Gly Phe Ile Thr Lys Ala Ile Asn Ser Ser His Thr Ser Ser Leu  
 50 55 60

Ala Thr Pro Glu Asp Lys Glu Gln Ala Gln Gln Met Asn Gln Lys Asp  
 65 70 75 80

Phe Leu Ser Leu Ile Val Ser Ile Leu Arg Ser Trp Asn Glu Pro Leu  
 85 90 95

Tyr His Leu Val Thr Glu Val Arg Gly Met Gln Glu Ala Pro Glu Ala  
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Ile Leu Ser Lys Ala Val Glu Ile Glu Glu Gln Thr  
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 20 25 30

Leu Ser Ser Glu Met Phe Ser Glu Phe Asp Lys Arg Tyr Thr His Gly  
 35 40 45

Arg Gly Phe Ile Thr Lys Ala Ile Asn Ser Ser His Thr Ser Ser Leu  
 50 55 60

Ala Thr Pro Glu Asp Lys Glu Gln Ala Gln Gln Met Asn Gln Lys Asp  
 65 70 75 80

Phe Leu Ser Leu Ile Val Ser Ile Leu Arg Ser Trp Asn Glu Pro Leu  
 85 90 95

Tyr His Leu Val Thr Glu Val Arg Gly Met Gln Glu Ala Pro Glu Ala  
 100 105 110

Ile Leu Ser Lys Ala Val Glu Ile Glu Glu Gln Thr Lys Arg Leu Leu  
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Glu Gly Met Glu Leu Ile Val Ser Gln Val His Pro  
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Arg Asp Leu Phe Asp Arg Ala Val Val Leu Ser His Tyr Ile His Asn  
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Leu Ser Ser Glu Met Phe Ser Glu Phe Asp Lys Arg Tyr Thr His Gly  
 35 40 45

Arg Gly Phe Ile Thr Lys Ala Ile Asn Ser Ser His Thr Ser Ser Leu  
 50 55 60

Ala Thr Pro Glu Asp Lys Glu Gln Ala Gln Gln Met Asn Gln Lys Asp  
 65 70 75 80

Phe Leu Ser Leu Ile Val Ser Ile Leu Arg Ser Trp Asn Glu Pro Leu  
 85 90 95

Tyr His Leu Val Thr Glu Val Arg Gly Met Gln Glu Ala Pro Glu Ala  
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Ile Leu Ser Lys Ala Val Glu Ile Glu Glu Gln Thr Lys Arg Leu Leu  
 115 120 125

Glu Gly Met Glu Leu Ile Val Ser Gln Val His Pro Arg Pro Pro  
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<212> DNA

<213> Homo sapiens

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<213> Homo sapiens

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<212> DNA

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Glu Glu Thr Tyr Ile Pro Lys Asp Gln Lys Tyr Ser Phe Leu His Asp  
35 40 45  
Ser Gln Thr Ser Phe Cys Phe Ser Asp Ser Ile Pro Thr Pro Ser Asn  
50 55 60  
Met Glu Glu Thr Gln Gln Lys Ser Asn Leu Glu Leu Leu Arg Ile Ser  
65 70 75 80  
Leu Leu Leu Ile Glu Ser Trp Leu Glu Pro Val Arg Phe Leu Arg Ser  
85 90 95  
Met Phe Ala Asn Asn Leu Val Tyr Asp Thr Ser Asp Ser Asp Asp Tyr  
100 105 110  
His Leu Leu Lys Asp Leu Glu Glu Gly Ile Gln Thr Leu Met Gly Arg  
115 120 125  
Leu Glu Asp Gly Ser Arg Arg Thr Gly Gln Ile Leu Lys Gln Thr Tyr  
130 135 140  
Ser Lys Phe Asp Thr Asn Ser His Asn His Asp Ala Leu Leu Lys Asn  
145 150 155 160  
Tyr Gly Leu Leu Tyr Cys Phe Arg Lys Asp Met Asp Lys Val Glu Thr  
165 170 175  
Phe Leu Arg Met Val Gln Cys Arg Ser Val Glu Gly Ser Cys Gly Phe  
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<210> 18  
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<213> Homo sapiens

<400> 18

Met Val Gln Thr Val Pro Leu Ser Arg Leu Phe Asp His Ala Met Leu  
1 5 10 15

Gln Ala His Arg Ala His Gln Leu Ala Ile Asp Thr Tyr Gln Glu Phe  
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Glu Glu Thr Tyr Ile Pro Lys Asp Gln Lys Tyr Ser Phe Leu His Asp  
35 40 45

Ser Gln Thr Ser Phe Ser Phe Ser Asp Ser Ile Pro Thr Pro Ser Asn  
50 55 60

Met Glu Glu Thr Gln Gln Lys Ser Asn Leu Glu Leu Leu Arg Ile Ser  
65 70 75 80

Leu Leu Leu Ile Glu Ser Trp Leu Glu Pro Val Arg Phe Leu Arg Ser  
85 90 95

Met Phe Ala Asn Asn Leu Val Tyr Asp Thr Ser Asp Ser Asp Asp Tyr  
100 105 110

His Leu Leu Lys Asp Leu Glu Glu Gly Ile Gln Thr Leu Met Gly Arg  
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Leu Glu Asp Gly Ser Pro Arg  
130 135

<210> 19

<211> 579

<212> DNA

<213> Homo sapiens

<400> 19

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<211> 405

<212> DNA

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acaccctcca acagggagga aacacaacag aaatccaacc tagagctgct ccgcatctcc 240  
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gtcttcataa gtaaggacgt cttgggggtc tggagggaga caaagagtct cagataaggc 180  
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atgcccagcg agatgacgaa gtccttcctg tacctgttcc agctctgtaa ggacgcgtag 540  
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20 25 30

Glu Glu Ala Tyr Ile Pro Lys Glu Gln Lys Tyr Ser Phe Leu Gln Asn  
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 Pro Gln Thr Ser Leu Cys Phe Ser Glu Ser Ile Pro Thr Pro Ser Asn  
           50                          55                          60  
 Arg Glu Glu Thr Gln Gln Lys Ser Asn Leu Glu Leu Leu Arg Ile Ser  
       65                          70                          75                          80  
 Leu Leu Leu Ile Gln Ser Trp Leu Glu Pro Val Gln Phe Leu Arg Ser  
                           85                          90                          95  
 Val Phe Ala Asn Ser Leu Val Tyr Gly Ala Ser Asp Ser Asn Val Tyr  
                           100                          105                          110  
 Asp Leu Leu Lys Asp Leu Glu Glu Gly Ile Gln Thr Leu Met Gly Arg  
           115                          120                          125  
 Leu Glu Asp Gly Ser Pro Arg Thr Gly Gln Ile Phe Lys Gln Thr Tyr  
           130                          135                          140  
 Ser Lys Phe Asp Thr Asn Ser His Asn Asp Asp Ala Leu Leu Lys Asn  
       145                          150                          155                          160  
 Tyr Gly Leu Leu Tyr Cys Phe Arg Lys Asp Met Asp Lys Val Glu Thr  
                           165                          170                          175  
 Phe Leu Arg Ile Val Gln Cys Arg Ser Val Glu Gly Ser Cys Gly Phe  
                           180                          185                          190

<210> 24  
 <211> 134  
 <212> PRT  
 <213> Homo sapiens

<400> 24  
 Met Phe Pro Thr Ile Pro Leu Ser Arg Leu Phe Asp Asn Ala Met Leu  
       1                          5                          10                          15  
 Arg Ala His Arg Leu His Gln Leu Ala Phe Asp Thr Tyr Gln Glu Phe  
           20                          25                          30  
 Glu Glu Ala Tyr Ile Pro Lys Glu Gln Lys Tyr Ser Phe Leu Gln Asn  
           35                          40                          45  
 Pro Gln Thr Ser Leu Ser Phe Ser Glu Ser Ile Pro Thr Pro Ser Asn  
           50                          55                          60

Arg Glu Glu Thr Gln Gln Lys Ser Asn Leu Glu Leu Leu Arg Ile Ser  
65 70 75 80

Leu Leu Leu Ile Gln Ser Trp Leu Glu Pro Val Gln Phe Leu Arg Ser  
85 90 95

Val Phe Ala Asn Ser Leu Val Tyr Gly Ala Ser Asp Ser Asn Val Tyr  
100 105 110

Asp Leu Leu Lys Asp Leu Glu Glu Gly Ile Gln Thr Leu Met Gly Arg  
115 120 125

Leu Glu Asp Gly Ser Pro  
130

<210> 25  
<211> 579  
<212> DNA  
<213> Homo sapiens

<400> 25  
atgttcccaa ccattccctt atccaggctt tttgacaacg ctatgctccg cgcccgtcgc 60  
ctgtaccagc tggcatatga cacctatcag gagtttgaag aagcctatat cctgaaggag 120  
cagaagtatt cattcctgca gaacccccag acctccctct gcttctcaga gtctattcca 180  
acaccttcca acaggggtgaa aacgcagcag aaatctaacc tagagctgct ccgcatctcc 240  
ctgctgctca tccagtcatt gctggagccc gtgcagctcc tcaggagcgt cttcgccaac 300  
agcctgggtg atggcgctc ggacagcaac gtctatcgcc acctgaagga cctagaggaa 360  
ggcatccaaa cgctgatgtg gaggctggaa gatggcagcc cccggactgg gcagatcttc 420  
aatcagtcct acagcaagtt tgacacaaaa tcgcacaacg atgacgcact gctcaagaac 480  
tacgggctgc tctactgctt caggaaggac atggacaagg tcgagacatt cctgcgcattc 540  
gtgcagtgcc gctctgtgga gggcagctgt ggcttctag 579

<210> 26  
<211> 579  
<212> DNA  
<213> Homo sapiens

<400> 26  
atgttcccaa ccattccctt atccaggctt tttgacaacg ctatgctccg cgcccgtcgc 60  
ctgtaccagc tggcatatga cacctatcag gagtttgaag aagcctatat cctgaaggag 120  
cagaagtatt cattcctgca gaacccccag acctccctct gcttctcaga gtctattcca 180  
acaccttcca acaggggtgaa aacgcagcag aaatctaacc tagagctgct ccgcatctcc 240  
ctgctgctca tccagtcatt gctggagccc gtgcagctcc tcaggagcgt cttcgccaac 300  
agcctgggtg atggcgctc ggacagcaac gtctatcgcc acctgaagga cctagaggaa 360  
ggcatccaaa cgctgatgtg gaggctggaa gatggcagcc cccggactgg gcagatcttc 420  
aatcagtcct acagcaagtt tgacacaaaa tcgcacaacg atgacgcact gctcaagaac 480  
tacgggctgc tctactgctt caggaaggac atggacaagg tcgagacatt cctgcgcattc 540  
gtgcagtgcc gctctgtgga gggcagctgt ggcttctag 579

<210> 27

<211> 579  
 <212> DNA  
 <213> Homo sapiens

<400> 27  
 tacaaggggtt ggtaagggaa taggtccgaa aaactggtgc gatacgaggc gcgggcagcg 60  
 gacatgggtcg accgtatact gtggatagtc ctcaaacttc ttcggatata ggacttcctc 120  
 gtcttcataa gtaaggacgt cttgggggtc tggagggaga cgaagagtct cagataaggt 180  
 tgtggaaggt tgtcccaactt ttgcgtcgtc tttagattgg atctcgacga ggcgtagagg 240  
 gacgacgagt aggtcagtag cgacctcggg cacgtcgagg agtcctcgca gaagcggttg 300  
 tcggaccaca taccgcggag cctgtcgttg cagatagcgg tggacttcct ggatctcctt 360  
 ccgtagggttt gcgactacac ctccgacctt ctaccgtcgg gggcctgacc cgtctagaag 420  
 ttagtcagga tgtcgttcaa actgtgtttt agcgtgttgc tactgcgtga cgagttcttg 480  
 atgcccagcg agatgacgaa gtccttcctg tacctgttcc agctctgtaa ggacgcgtag 540  
 cacgtcacgg cgagacacct cccgtcgaca ccgaagatc 579

<210> 28  
 <211> 579  
 <212> DNA  
 <213> Homo sapiens

<400> 28  
 tacaaggggtt ggtaagggaa taggtccgaa aaactggtgc gatacgaggc gcgggcagcg 60  
 gacatgggtcg accgtatact gtggatagtc ctcaaacttc ttcggatata ggacttcctc 120  
 gtcttcataa gtaaggacgt cttgggggtc tggagggaga cgaagagtct cagataaggt 180  
 tgtggaaggt tgtcccaactt ttgcgtcgtc tttagattgg atctcgacga ggcgtagagg 240  
 gacgacgagt aggtcagtag cgacctcggg cacgtcgagg agtcctcgca gaagcggttg 300  
 tcggaccaca taccgcggag cctgtcgttg cagatagcgg tggacttcct ggatctcctt 360  
 ccgtagggttt gcgactacac ctccgacctt ctaccgtcgg gggcctgacc cgtctagaag 420  
 ttagtcagga tgtcgttcaa actgtgtttt agcgtgttgc tactgcgtga cgagttcttg 480  
 atgcccagcg agatgacgaa gtccttcctg tacctgttcc agctctgtaa ggacgcgtag 540  
 cacgtcacgg cgagacacct cccgtcgaca ccgaagatc 579

<210> 29  
 <211> 192  
 <212> PRT  
 <213> Homo sapiens

<400> 29  
 Met Phe Pro Thr Ile Pro Leu Ser Arg Leu Phe Asp Asn Ala Met Leu  
 1 5 10 15  
 Arg Ala Arg Arg Leu Tyr Gln Leu Ala Tyr Asp Thr Tyr Gln Glu Phe  
 20 25 30  
 Glu Glu Ala Tyr Ile Leu Lys Glu Gln Lys Tyr Ser Phe Leu Gln Asn  
 35 40 45  
 Pro Gln Thr Ser Leu Cys Phe Ser Glu Ser Ile Pro Thr Pro Ser Asn  
 50 55 60  
 Arg Val Lys Thr Gln Gln Lys Ser Asn Leu Glu Leu Leu Arg Ile Ser

65		70		75		80									
Leu	Leu	Leu	Ile	Gln	Ser	Trp	Leu	Glu	Pro	Val	Gln	Leu	Leu	Arg	Ser
				85					90					95	
Val	Phe	Ala	Asn	Ser	Leu	Val	Tyr	Gly	Ala	Ser	Asp	Ser	Asn	Val	Tyr
			100					105					110		
Arg	His	Leu	Lys	Asp	Leu	Glu	Glu	Gly	Ile	Gln	Thr	Leu	Met	Trp	Arg
		115					120					125			
Leu	Glu	Asp	Gly	Ser	Pro	Arg	Thr	Gly	Gln	Ile	Phe	Asn	Gln	Ser	Tyr
	130					135					140				
Ser	Lys	Phe	Asp	Thr	Lys	Ser	His	Asn	Asp	Asp	Ala	Leu	Leu	Lys	Asn
145					150					155					160
Tyr	Gly	Leu	Leu	Tyr	Cys	Phe	Arg	Lys	Asp	Met	Asp	Lys	Val	Glu	Thr
			165						170					175	
Phe	Leu	Arg	Ile	Val	Gln	Cys	Arg	Ser	Val	Glu	Gly	Ser	Cys	Gly	Phe
			180					185					190		

<210> 30  
 <211> 135  
 <212> PRT  
 <213> Homo sapiens

<400> 30
Met Phe Pro Thr Ile Pro Leu Ser Arg Leu Phe Asp Asn Ala Met Leu
1 5 10 15
Arg Ala Arg Arg Leu Tyr Gln Leu Ala Tyr Asp Thr Tyr Gln Glu Phe
20 25 30
Glu Glu Ala Tyr Ile Leu Lys Glu Gln Lys Tyr Ser Phe Leu Gln Asn
35 40 45
Pro Gln Thr Ser Leu Cys Phe Ser Glu Ser Ile Pro Thr Pro Ser Asn
50 55 60
Arg Val Lys Thr Gln Gln Lys Ser Asn Leu Glu Leu Leu Arg Ile Ser
65 70 75 80
Leu Leu Leu Ile Gln Ser Trp Leu Glu Pro Val Gln Leu Leu Arg Ser
85 90 95
Val Phe Ala Asn Ser Leu Val Tyr Gly Ala Ser Asp Ser Asn Val Tyr

100	105	110
Arg His Leu Lys Asp Leu Glu Glu Gly Ile Gln Thr Leu Met Trp Arg		
115	120	125

  

Leu Glu Asp Gly Ser Pro Arg
130 135

  

<210> 31  
 <211> 18  
 <212> DNA  
 <213> Homo sapiens

  

<400> 31  
 cctgaaacca aagaaaat 18

  

<210> 32  
 <211> 6  
 <212> PRT  
 <213> Homo sapiens

  

<400> 32  
 Pro Glu Thr Lys Glu Asn  
 1 5

  

<210> 33  
 <211> 18  
 <212> DNA  
 <213> Artificial Sequence

  

<220>  
 <223> Description of Artificial Sequence: nucleotide  
 sequence coding for specific cleavage site of the  
 IgA protease

  

<400> 33  
 cctagacccc caacacct 18

  

<210> 34  
 <211> 6  
 <212> PRT  
 <213> Artificial Sequence

  

<220>  
 <223> Description of Artificial Sequence: specific  
 cleavage site of the IgA protease

  

<400> 34  
 Pro Arg Pro Pro Thr Pro  
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